

Bivariate Data Practice Exercise: Bond Yields

Countries borrow money internationally via “bond” issues. Lenders bid to lend by way of what interest rate they feel is worthwhile, termed their “yield”. From the country’s point of view the lower the yield the better, because they are paying less interest.

Many factors influence the yield, so that it is hard to untangle which is most important.

Task

With the data you are given (next page and separate Excel worksheet) pose possible linkages between the variables given and the bond yields.

Test using scatter plots and bivariate methods and then answer your questions.

Suggest problems, improvements and further lines of enquiry.

The Data

Name:	The country’s common name is given.
Bond Rates:	The percentage yield for each country in 2010. Low is good for the country and suggest that investors consider it a lower risk.
Inflation:	The internal inflation rate for 2010. Low is generally a sign of good economic health for a country.
Debt %:	How much the government owes. It is expressed as a % of total GDP, so that it is an equal measure for big and small economies. Generally the lower the easier it will be for governments to repay debt.
Corruption:	A measure of how corrupt a country is, which is known to concern investors. On Transparency International’s scale of 10 (good) to 0 (bad).
GDP per capita:	A measure of the wealthy the country’s people are. It is per capita, to even out between big and small countries, and is in PPP (purchasing parity) to even out exchange rate issues. The higher it is the more the people earn, on average.
Log GDP:	Because GDP varies over such a wide range, it is often found that its logarithm is a more useful measure. Each +1 means the GDP per person is 10× as large.
Life expectancy:	An indirect measure of the health of a country’s people. The number indicates the average age a person will live.
Gini Coefficient:	A measure of how much gap there is between a country’s rich and poor. A large number indicates that the rich earn a lot more than the poor: 25 is very low (Japan and Scandinavia, where almost everyone is well off) to around 60 (South Africa and Columbia, where there are a lot of very poor but also quite a few rich).

Name	Bond rates	Inflation %	debt %	Corruption	GDP	Log(GDP)	Life expect	Gini coeff
Japan	1	0	220.3	8	34,000	4.53	82.6	25
Switzerland	1.51	0.5	55	8.8	42,600	4.63	82.1	34
Singapore	2.11	4.6	97.2	9.2	62,100	4.79	80	42
Hong Kong	2.24	2.9	4.8	8.4	45,900	4.66	82.2	43
Germany	2.51	1.7	83.2	8	35,700	4.55	79.4	28
Denmark	2.65	2.8	43.6	9.4	36,600	4.56	78.3	25
Netherlands	2.75	1.9	63.7	8.9	40,300	4.61	79.8	31
Finland	2.76	2.9	48.4	9.4	35,400	4.55	79.3	27
United States	2.79	1.5	93.2	7.1	47,200	4.67	78.3	41
Sweden	2.83	2.3	39.8	9.3	39,100	4.59	80.9	25
France	2.96	1.8	81.7	7	33,100	4.52	80.7	33
Canada	3.02	2.4	84	8.7	39,400	4.6	80.7	33
Austria	3.2	2.3	72.3	7.8	40,400	4.61	79.8	29
United Kingdom	3.2	3.7	80	7.8	34,800	4.54	79.4	36
Norway	3.27	2.8	44.7	9	54,600	4.74	80.2	26
Belgium	3.43	3.4	96.8	7.5	37,800	4.58	79.4	33
Czech Republic	3.54	2.3	38.5	4.4	25,600	4.41	76.5	26
Thailand	3.64	3	44.1	3.4	8,700	3.94	70.6	42
Malaysia	3.85	2.2	54.2	4.3	14,700	4.17	74.2	46
China	3.9	4.6	17.7	3.6	7,600	3.88	73	42
Italy	4.16	1.9	119	3.9	30,500	4.48	80.5	36
Israel	4.52	2.7	77.9	5.8	29,800	4.47	82	39
Spain	4.53	3	60.1	6.2	29,400	4.47	80.9	35
South Korea	4.54	3.5	30.86	5.4	30,000	4.48	78.6	32
Australia	5.34	2.7	22.3	8.8	41,000	4.61	81.2	35
New Zealand	5.42	4	31.6	9.5	27,700	4.44	80.2	36
Latvia	5.46	2.4	44.7	4.2	14,700	4.17	72.7	36
Peru	5.52	2.08	24.3	3.4	9,200	3.96	71.4	48
Russia	5.59	8.8	9.9	2.4	15,900	4.2	65.5	42
Egypt	5.75	10.3	73.8	2.9	6,200	3.79	71.3	32
Poland	5.75	3.1	55	5.5	18,800	4.27	75.6	34
Sri Lanka	6.25	6.9		3.3	5,000	3.7	72.4	40
Mexico	6.27	4.4	42.7	3	13,900	4.14	76.2	52
Portugal	6.74	2.5	93	6.1	23,000	4.36	78.1	38
Angola	6.75	15.31	31.4	2	8,200	3.91		59
Colombia	7.01	3.17	36.5	3.4	9,800	3.99	72.9	58
Kenya	7.1	4.51	50.5	2.2	1,600	3.2	54.1	48
Hungary	7.18	4.7	80.2	4.6	18,800	4.27	73.3	31
Ukraine	7.3	9.1	40.5	2.3	6,700	3.83	67.9	28
Indonesia	7.4	6.96	26.9	3	4,200	3.62	70.7	37
South Africa	7.93	3.5	35.7	4.1	10,700	4.03	49.3	67
India	8.1	9.47	69.2	3.1	3,500	3.54	64.7	37
Ireland	8.14	1.3	96.2	7.5	37,300	4.57	78.9	34
Bangladesh	9.11	8.28	27.7	2.7	1,700	3.23	64.1	31
Greece	11.39	5.2	142.8	3.4	29,600	4.47	79.5	34
Brazil	12.38	5.91	66.1	3.8	10,800	4.03	72.4	54
Vietnam	12.4	11.75	52.8	2.9	3,100	3.49	74.2	38
Pakistan	13.83	15.46	56.8	2.5	2,500	3.4	65.5	33
Ghana	15	8.58	41.2	3.9	2,500	3.4	60	43
Venezuela	15	27.2	38.7	1.9	12,700	4.1	73.7	44